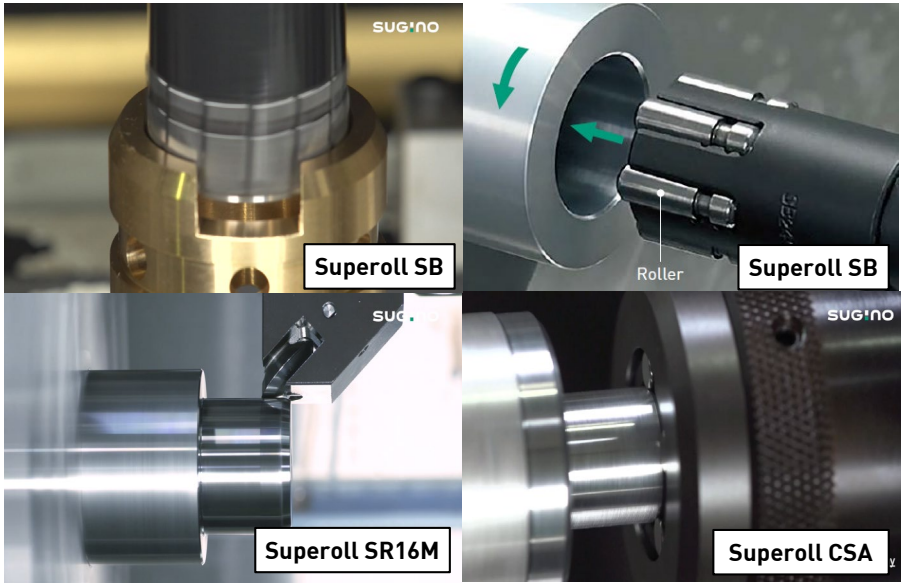
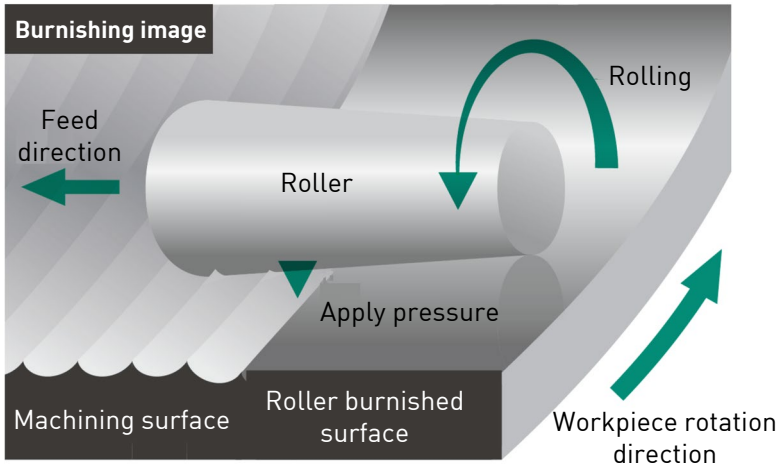
Smooth

Improve machined surface roughness by Superoll

Achieve Rz 0.1 to 0.8 μm finish in one-pass.





Smooth out uneven machined surface by rollers.

Smooth　Improve machined surface roughness by Superoll

Q: Can Rz 3.2μm (Target value: around Rz 2μm) be achieved in mass production with Machining alone or Machining and Grinding?

A: Yes, but it is difficult and expensive because...

	Machining	Machining & Grinding
Problems	Strict control for cutting tools is required. = Increases QC cost.	• High initial costs for machines • Increases QC cost for machines. • Additional set up time is required.

Superolls reduces tool & machining costs!

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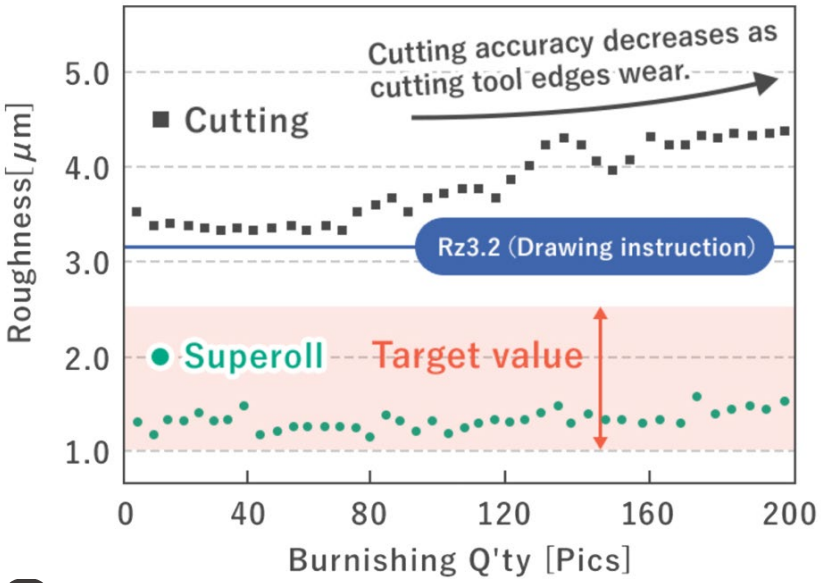
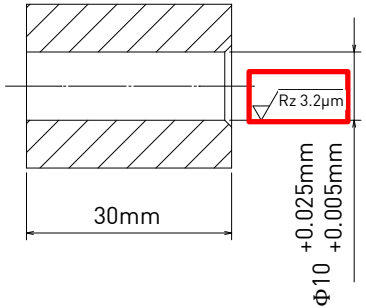
Superoll achieves a consistent finish of Rz 3.2μm or less.

- Roughly control for cutting is OK. (Around Rz 3 to 6μm)
- Increases cutting tool life for longer production runs.

Example



Workpiece　Material: S45C



Conditions

- Machining
  Feed rate: 0.1 mm/rev
  Rotation speed: 4,000 min^{-1}
- Superoll
  Feed rate: 1.2 mm/rev
  Rotation speed: 1,200 min^{-1}

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It's easy to use Superolls.

Merit of Superolls

- **Low initial costs.**
  (No special driving unit required.)

- **No need for additional setup**
  Burnishing involves a one-chuck after machining, which eliminates setup! (Shorter down as a result.)

Comparison with other methods

Finish roughness*	Machining	Grinding	Superoll
Rz 6.3μm	Easy	**Very easy**	**Very easy**
Rz 3.2μm	Hard	Easy	**Very easy**
Rz 1.6μm	Impossible	Hard	Easy
Rz 0.8μm	Impossible	Impossible	Easy

*Drawing instructions

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